

In the Specification

Please replace paragraph [0023] with the following amended paragraph.

[Para 23] Fig. 5 is a mask image reconstructed from those pixels having a ~~pulsality~~pulsatility factor less than a given value in accordance with the present invention.

Please replace paragraph [0031] with the following amended paragraph.

[Para 31] As will be described, an automated background correction technique is disclosed that segments objects within a PD image based on a degree of ~~pulsality~~pulsatility and, as such, excludes an object from a background phase fit or correction if the degree of ~~pulsality~~pulsatility indicates flow through the object. For instance, blood and other fluids typically pulsate while flowing through a subject. This ~~pulsality~~pulsatility can then be exploited to identify and differentiate blood or other fluid flow from stationary tissue. It is recognized that a number of approaches may be taken to determine or otherwise estimate flow ~~pulsality~~pulsatility. In one approach, a temporal frequency power spectrum is used to determine ~~pulsality~~pulsatility. In this regard, for a given pixel location within a PD image, if a given fraction of the signal is at a given energy level or within a given energy range, then the pixel is deemed to correspond to a region of pulsatile flow and is, therefore, excluded from a background phase fit.

Please replace paragraph [0034] with the following amended paragraph.

[Para 34] In one embodiment, those pixels having a certain percentage of their power spectrum at DC or zero Hertz are deemed to be the pixels predominantly composed of static or non-flowing spins. In this regard, the power spectrum for each pixel within the slice is evaluated at 84 to calculate or otherwise determine what percentage of each pixel's energy is at DC or zero Hertz. In one embodiment, those pixels having more than 15 percent of their power spectrum above DC are deemed to be pixels of predominantly flowing spins. In this regard, these pixels are deemed to have a higher ~~pulsality~~pulsatility index (PI) and, as such, are more pulsatile. A pixel's PI can be calculated as $PI(\%) = 100\% - A$, where A corresponds to the percentage of a given pixel's energy at DC or zero Hertz. Further, the power spectrum of each pixel is applied against a threshold 86 to identify those pixels within the selected slice predominantly composed of non-flowing, static

spins for inclusion in a mask image 88 that will be used for background correction in the PD image of the slice.

Please replace paragraph [0042] with the following amended paragraph.

[Para 42] Fig. 3 is a magnitude image reconstructed from image data acquired with a Y eddy current at a trigger delay of 216 msec corresponding to peak systolic flow. Fig. 4 is an uncorrected PD image. Fig. 5 is a mask image reconstructed from those pixels having a ~~pulsality~~pulsatility factor less than 0.15. Fig. 6 is a corrected PD image masked by the mask image of Fig. 5. From the images of Figs. 3-6 it is apparent that the correction technique of the present invention effectively removes background phase without being affected by flow induced phase. In this regard, the present invention provides an automated technique for correcting residual background phase independent of flow related phase.